Operating Instructions
Bedienungsanleitung
Mode d'emploi
Istruzioni per l'uso

DYNAMIC EXPANDER
DYNAMIKDEHNER
EXPANSEUR DYNAMIQUE
ESPANSORE DINAMICO DEL SUONO

EX-9000

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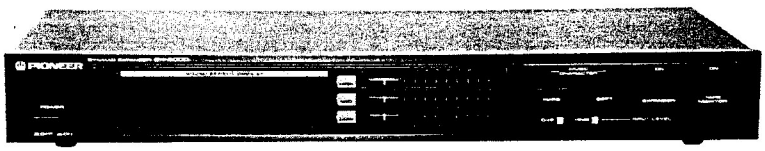


(The photograph shows BLACK finished model.)

Thank you for buying this Pioneer product.
Please read through these operating instructions and then you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In accordance with the power and voltage requirements of differing areas, the following model names are used to designate models with differing electrical specifications.

Models	Line voltage
HE, HEM, NEZ, HEZ, NE	a.c. 220 volts ~
WEM, WB, WP	a.c. 220—240 volts ~
S, S/G, SS	AC 110, 120, 220, 240 volts (Switchable voltage)
D, D/G	AC 120, 220, 240 volts (Switchable voltage)
R, R/G	AC 110—120, 220—240 volts (Switchable voltage)
KU, KC	AC 120 volts
YP, YB, HP, HB	a.c. 240 volts ~

NOTES:

- *The model names are stamped on the packing case.*
- *These operating instructions are prepared on the basis of the HEM model, and they can be used for other models. Although the design of the power plug and the power outlet shown may differ from the actual one, the operating procedures are the same.*

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

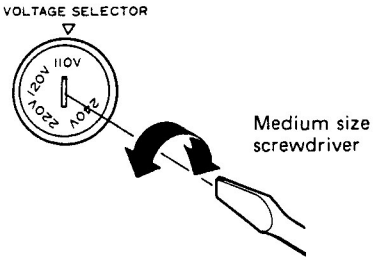
ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

LINE VOLTAGE SELECTOR SWITCH

Only multi-voltage models are provided with this switch, U.S.A., Canadian, U.K., Australian and European models are not provided with this switch.

You will find the line voltage selector switch on the rear panel. Before your model is shipped from the factory, the switch is set to the power requirements of the destination; nevertheless, you should check that it is set properly before plugging the power cord into the AC outlet. If the voltage is not properly set, or if you move to an area where the voltage requirements differs, adjust the selector switch as follows. Before adjusting, disconnect the power cord.

1. Provide yourself with a medium size screwdriver.
2. Insert the screwdriver into the groove of the selector switch and turn it so that the power voltage marking of your area points to the arrow.



WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE [For U.S.A. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep in a secure area. This is for your security.

ENGLISH
DEUTSCH
FRANÇAIS
ITALIANO

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PIONEER

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS – The operating instructions should be retained for future reference.

HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.

WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION – The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.

VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES – An outdoor antenna should be located away from power lines.

NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE – The appliance should be serviced by Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped; or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. For all other servicing, contact the nearest Pioneer authorized service center.

OUTDOOR ANTENNA GROUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

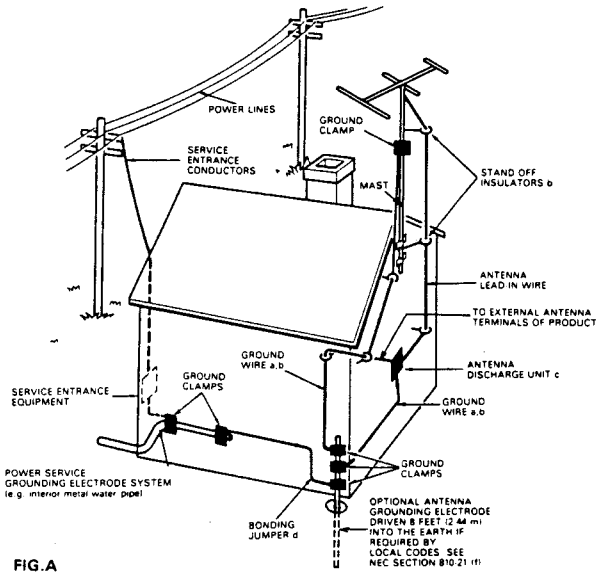

POWER LINES
GROUND CLAMP
SERVICE ENTRANCE CONDUCTORS
MAST
STAND OFF INSULATORS b
ANTENNA LEAD IN WIRE
TO EXTERNAL ANTENNA TERMINALS OF PRODUCT
GROUND WIRE a,b
ANTENNA DISCHARGE UNIT c
GROUND CLAMPS
SERVICE ENTRANCE EQUIPMENT
GROUND WIRE a,b
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (e.g. interior metal water pipe)
BONDING JUMPER d
OPTIONAL ANTENNA GROUNDING ELECTRODE DRIVEN 8 FEET (2.44 m) INTO THE EARTH IF REQUIRED BY LOCAL CODES SEE NEC SECTION 810-21 (f)

FIG.A

a) Use No. 10 AWG (5.3mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel, bronze wire, or larger as ground wire.
b) Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
c) Mount antenna discharge unit as closely as possible to where lead-in enters house.
d) Use jumper wire not smaller than No.6 AWG (13.3mm²) copper or equivalent when separate antenna-grounding electrode is used.

IMPORTANT 1

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT 2

If the apparatus is fitted with AC mains power outlet(s), see REAR PANEL FACILITIES for convenient connection of additional Hi-Fi component(s). Make all connections to the AC outlet(s) and the signal terminals first. Connect the plug to the wall socket last, make sure that the power switch is off. Disconnect the wall plug when the equipment is not in (regular) use, e.g. when on vacation.

FOR USE IN THE UNITED KINGDOM

WARNING: This plug must only be connected to electronic apparatus equipped with suitable sockets.
Otherwise cut off and dispose of the plug, and fit an appropriate one in accordance with the instruction below.

The wires in this mains lead are coloured in accordance with the following code:

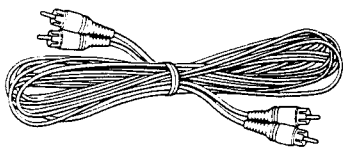
Blue: Neutral
Brown: Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured marking identifying the terminals in your plug proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

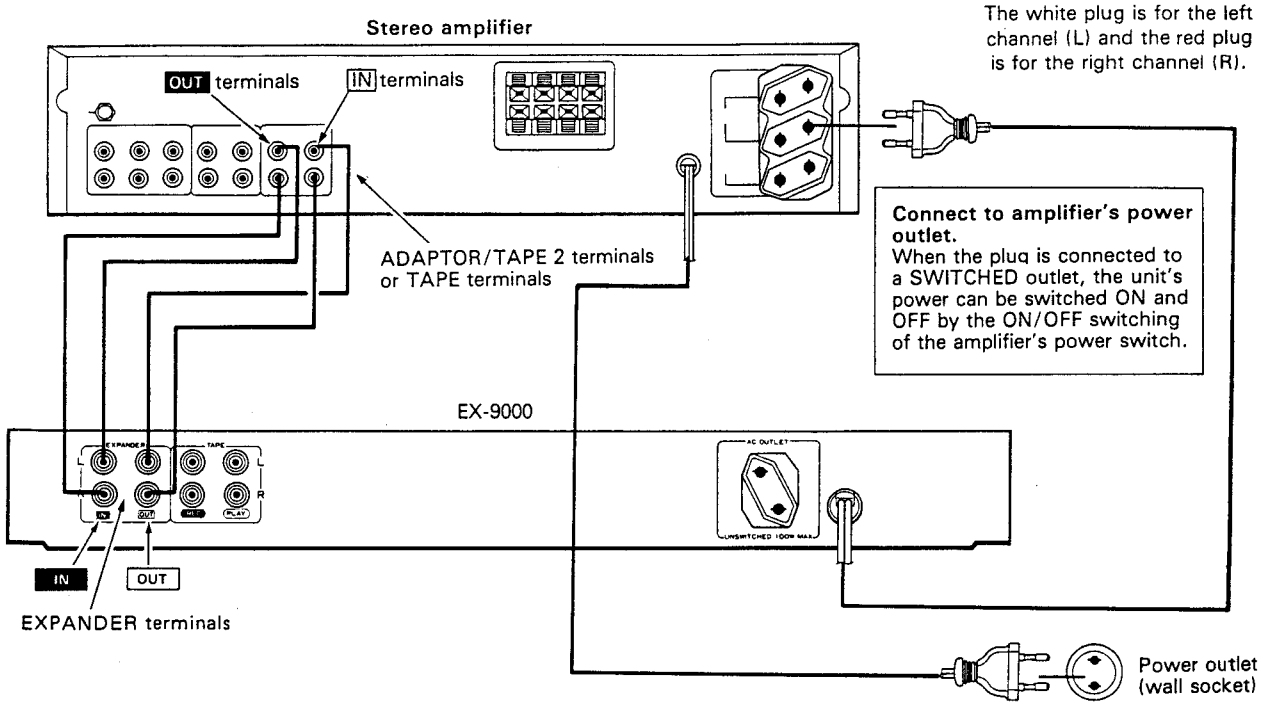
CONNECTIONS

The figure shows an example of the connections when the unit is used in combination with the Pioneer's stereo amplifier. For details, refer to the Operating Instructions of your stereo amplifier.

The accessory two pin plug cords
These are used to connect the unit with the stereo amplifier.



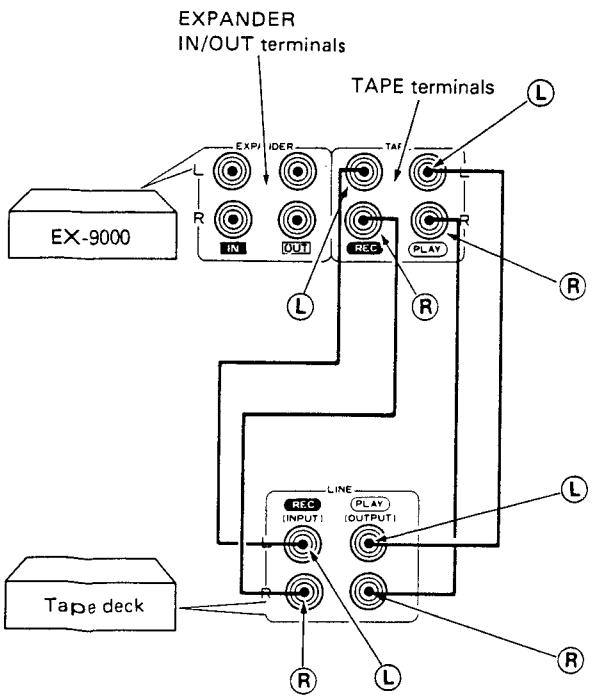
The white plug is for the left channel (L) and the red plug is for the right channel (R).


Stereo amplifier
OUT terminals
IN terminals
ADAPTOR/TAPE 2 terminals or TAPE terminals
Connect to amplifier's power outlet.
When the plug is connected to a SWITCHED outlet, the unit's power can be switched ON and OFF by the ON/OFF switching of the amplifier's power switch.
EX-9000
IN
OUT
EXPANDER terminals
Power outlet (wall socket)

ENGLISH

TAPE TERMINAL APPLICATIONS

- Use the TAPE terminals when connecting a tape deck or when connecting an adaptor such as an audio/video selector.



AC OUTLET (UNSWITCHED)

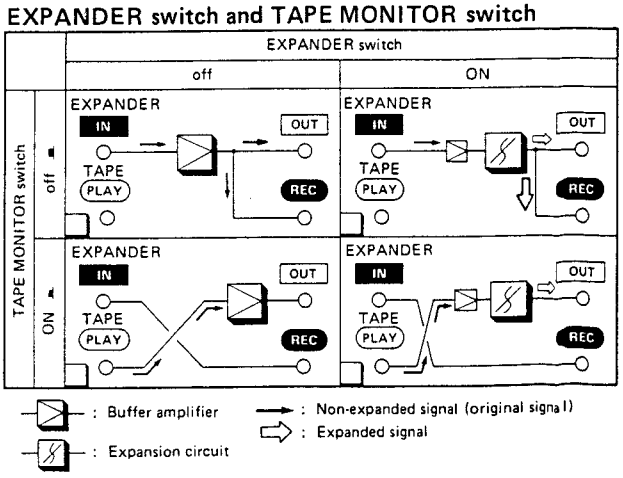
Power flows continually to this outlet, regardless of whether the expander is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 100 W. The equipment should be disconnected by removing the mains plug from the wall socket when not in regular use, e.g. when on vacation.

NOTE:

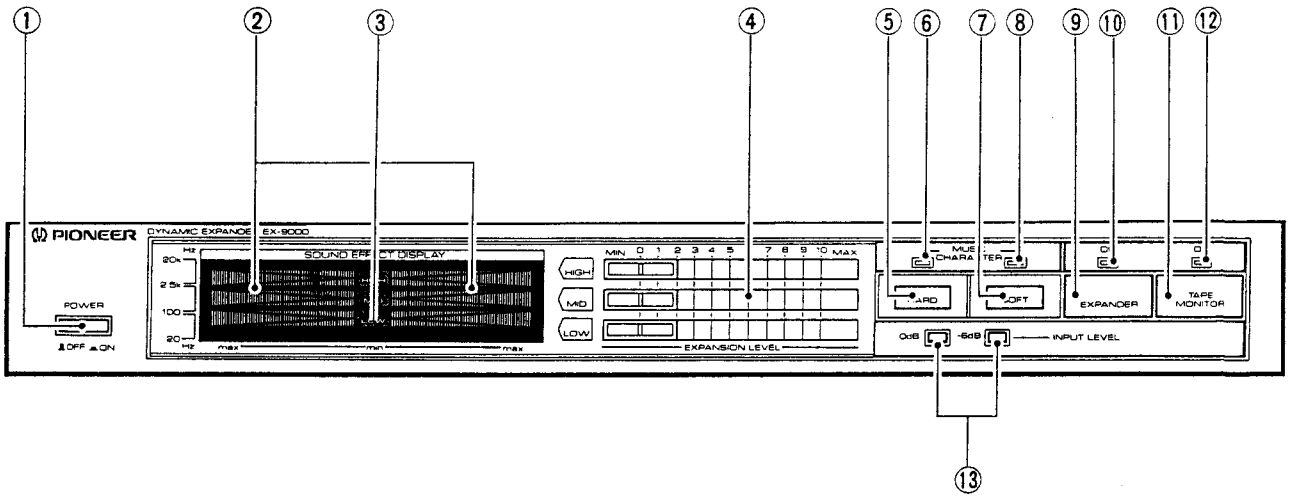
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET in order to avoid overheating or fire risk.

This can cause the expander to malfunction.

Relationship between signals and combination of the EXPANDER switch and TAPE MONITOR switch



FRONT PANEL FACILITIES



① POWER switch (■ OFF ▬ ON)

When this switch is set to the ON position, power is supplied to the unit's main circuits.
Disconnect the power cord from the power outlet when you do not plan to use the unit for a long period of time.

② SOUND EFFECT DISPLAY

This DISPLAY indicates the degree of expansion applied to the dynamic range. The three ranges LOW, MID, HIGH are indicated equally to right and left of center with the red and white F.L. tube display.

③ LOW, MID, HIGH indicators

These indicate the division of the frequency spectrum into three bands. When the POWER switch ① is pressed, these indicators light and thus function as power indicators.

④ LOW, MID, HIGH dynamic EXPANSION LEVEL controls

These controls divide the frequency spectrum into the three bands LOW (20 — 100 Hz), MID (100 — 2.5 kHz), and HIGH (2.5 kHz — 20 kHz); as the respective controls are moved toward the right, the dynamic range of the corresponding frequency is emphasized. Set the three controls to the optimum position in accordance with the type of music being played, and your own preferences. When set to the MIN position, the SOUND EFFECT DISPLAY will not move.

⑤ HARD position selector

Operates when the EXPANDER switch ⑨ is set to ON. The playback sound will take on a harder edge, with a greater sense of presence.

⑥ HARD indicator (MUSIC CHARACTER)

⑦ SOFT position selector

Operates when the EXPANDER switch ⑨ is set to ON. The playback sound will become softer, suitable for easy listening.

⑧ SOFT indicator (MUSIC CHARACTER)

⑨ EXPANDER switch

When this switch is pressed, expansion effect is added to the signals input to the EXPANDER INPUT terminals. The indicator ⑩ will light, and the SOUND EFFECT DISPLAY will operate. When set to OFF, the SOUND EFFECT DISPLAY ② and indicators ⑥ and ⑧ will not light, even if the HARD or SOFT switch (⑤ or ⑦), is pressed. In the OFF position, the expansion circuitry is disconnected, so a check can be performed of the degree of expansion effect by turning the switch on and off.

⑩ EXPANDER indicator

Lights when the EXPANDER switch is turned ON.

⑪ TAPE MONITOR switch

Press when playing back tapes or performing recording monitoring on the tape deck connected to the rear panel terminals. When you wish to add expansion effects to the tape's playback sound, press this switch and the EXPANDER switch ⑨.

⑫ TAPE MONITOR indicator

Lights when the TAPE MONITOR switch is set to ON.

⑬ INPUT LEVEL selector (0 dB, −6 dB)

Set in accordance with the input level of the input music source.

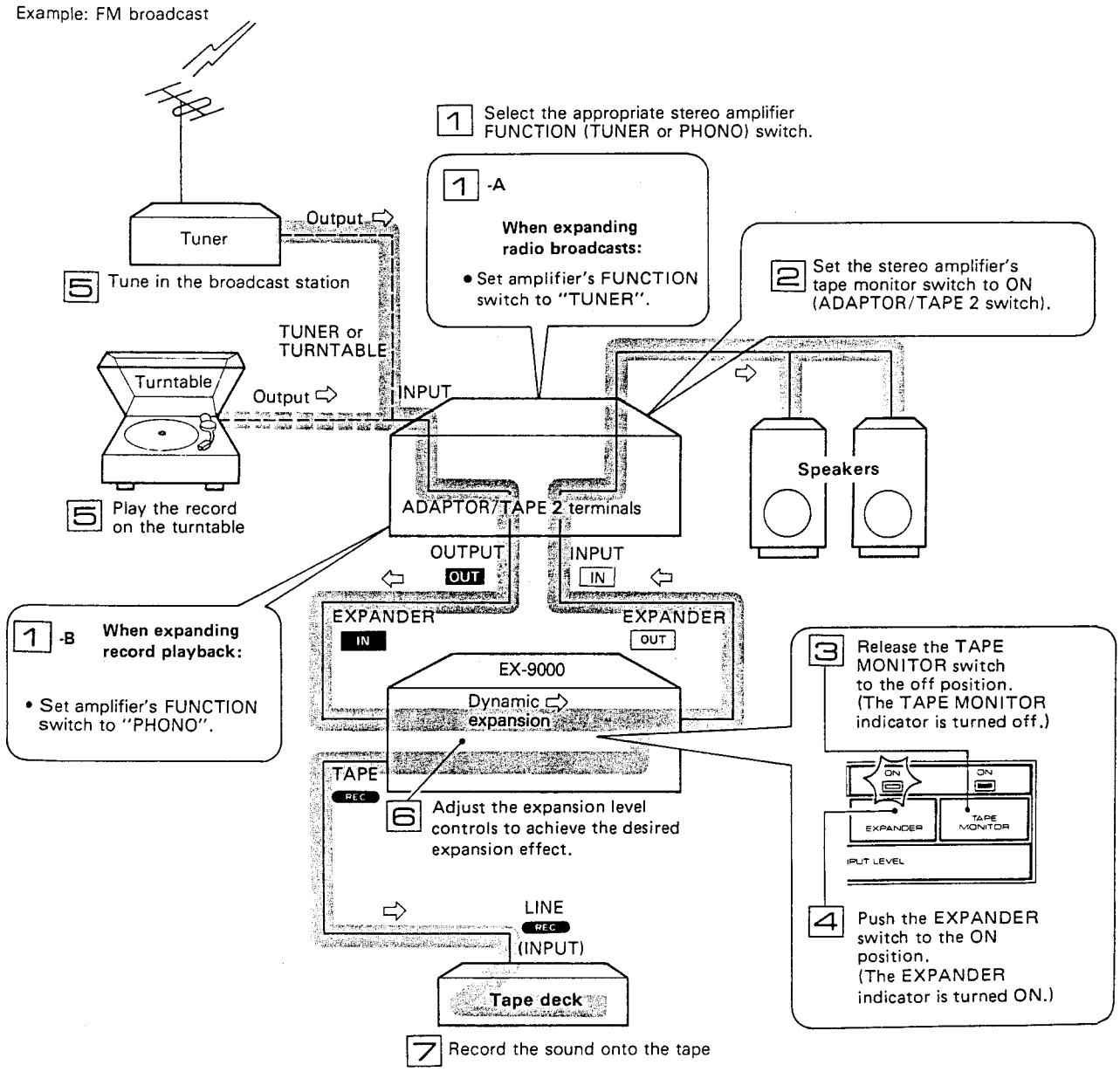
NOTES:

- *When the POWER switch is OFF, no signals will be output from the OUT terminals, regardless of the EXPANDER switch.*
- *When the TAPE MONITOR switch is ON, no expansion effect will be output from the TAPE REC terminals.*

COMBINED OPERATION

■ Tape recording a record program or radio broadcast with dynamic expansion effect

——— Operate in the numerical sequence ———



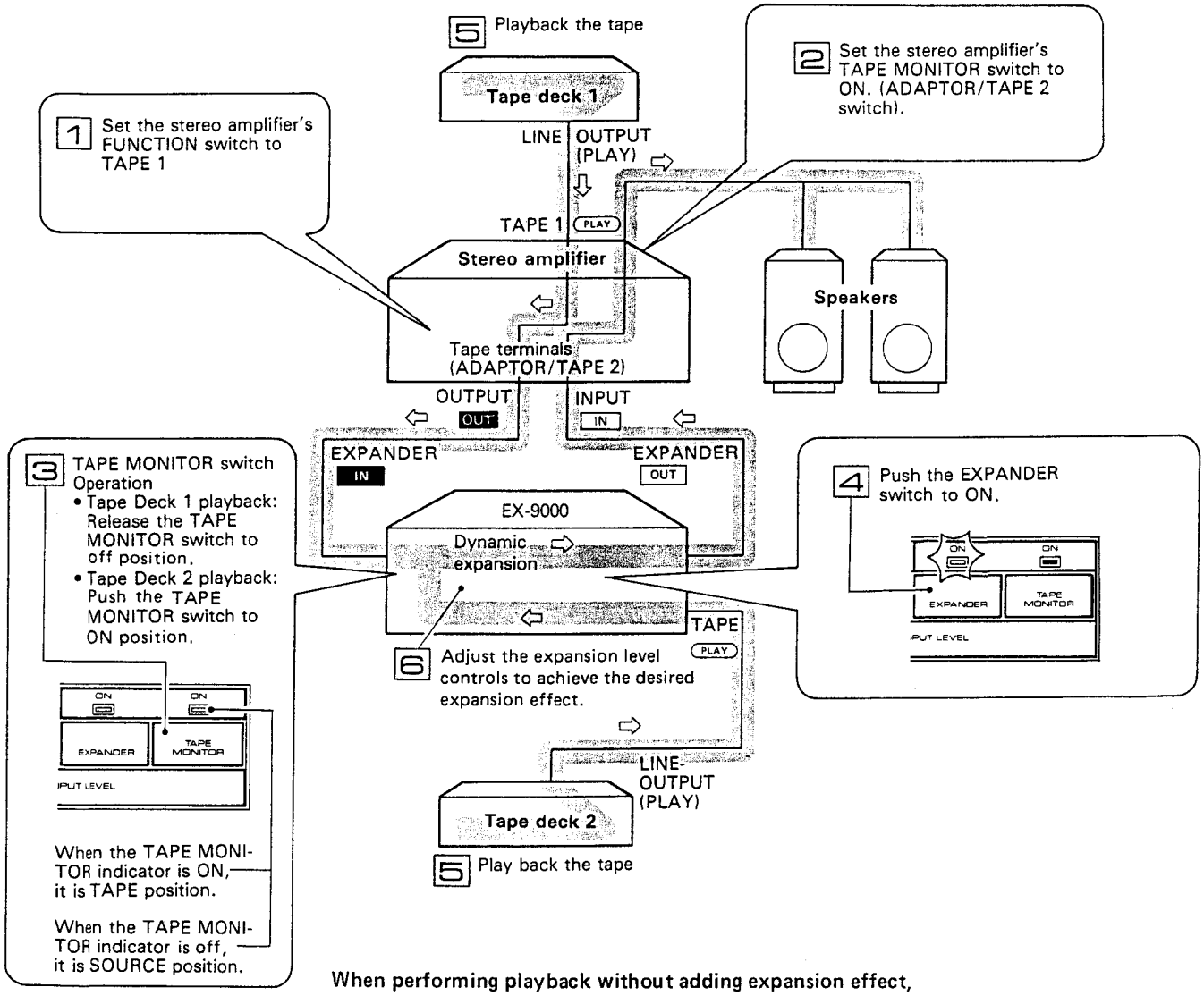
When recording without adding expansion effect and when monitoring the program source, release the EXPANDER switch to OFF.

Recordings made from radio broadcasts, records or other material may be used for personal enjoyment but may not be used in a way which will infringe the rights of copyright owners and contrary to law.

ENGLISH

■ Compensating tape playback with dynamic expansion effect

——— Operate in the numerical sequence. ———

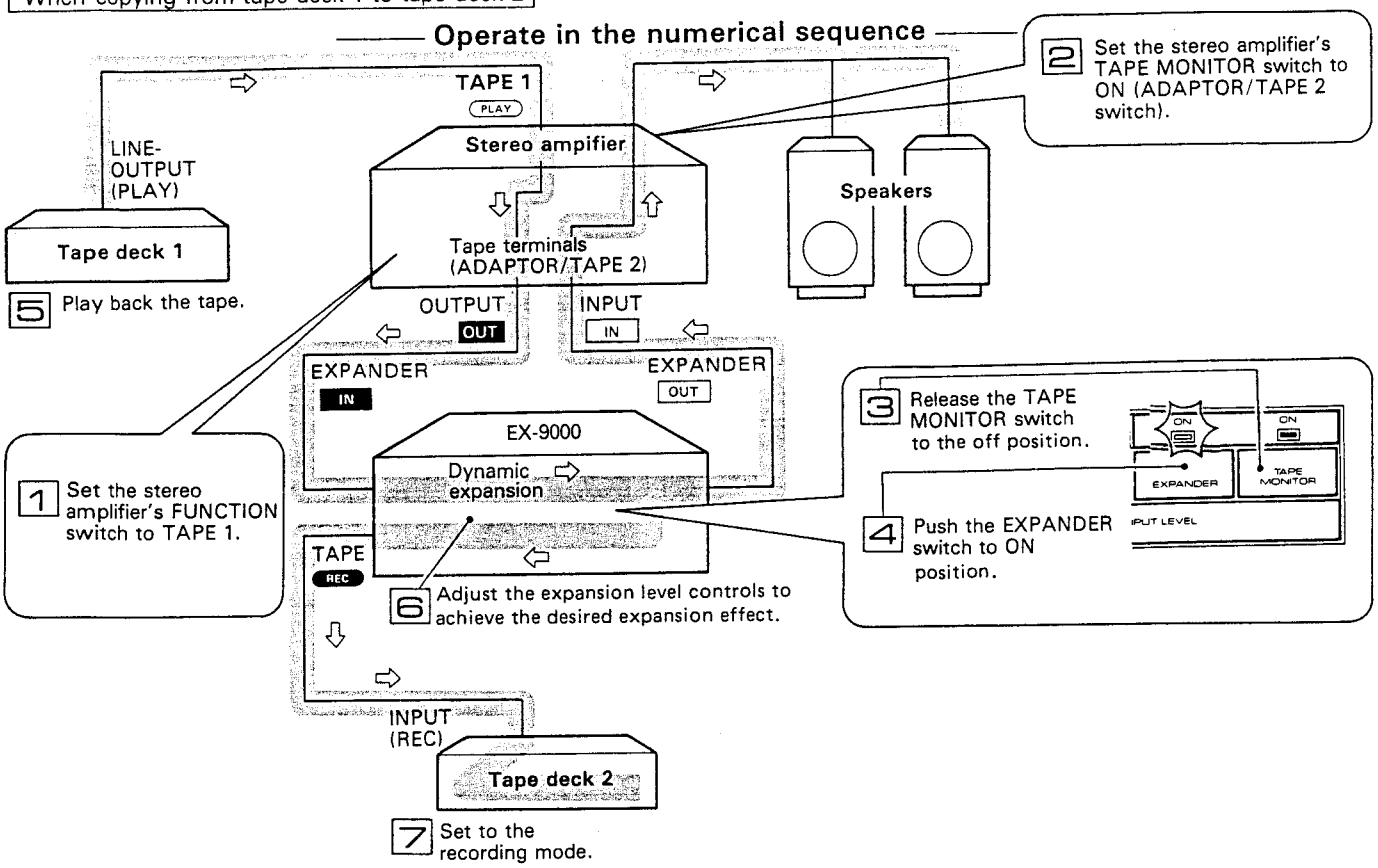

5 Playback the tape
Tape deck 1
LINE OUTPUT (PLAY)
TAPE 1 PLAY
Stereo amplifier
Tape terminals (ADAPTOR/TAPE 2)
OUTPUT OUT
INPUT IN
EXPANDER IN
EXPANDER OUT
EX-9000
Dynamic expansion
TAPE PLAY
LINE-OUTPUT (PLAY)
Tape deck 2
5 Play back the tape
1 Set the stereo amplifier's FUNCTION switch to TAPE 1
2 Set the stereo amplifier's TAPE MONITOR switch to ON. (ADAPTOR/TAPE 2 switch).
Speakers
3 TAPE MONITOR switch Operation
• Tape Deck 1 playback: Release the TAPE MONITOR switch to off position.
• Tape Deck 2 playback: Push the TAPE MONITOR switch to ON position.
ON
EXPANDER
TAPE MONITOR
When the TAPE MONITOR indicator is ON, it is TAPE position.
When the TAPE MONITOR indicator is off, it is SOURCE position.
4 Push the EXPANDER switch to ON.
6 Adjust the expansion level controls to achieve the desired expansion effect.

When performing playback without adding expansion effect, release the EXPANDER switch to OFF.

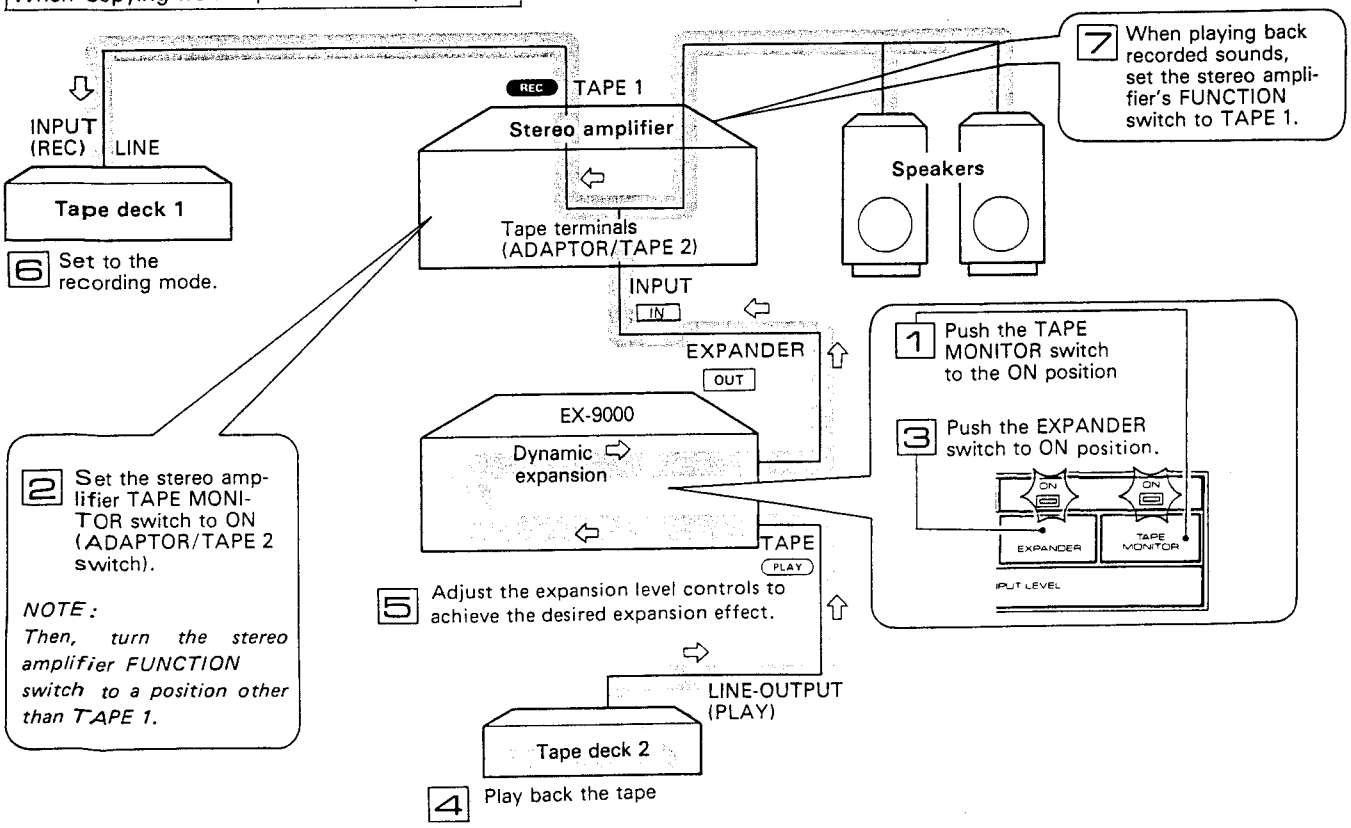
■ Performing tape editing with dynamic expansion effect

When copying from tape deck 1 to tape deck 2

Operate in the numerical sequence



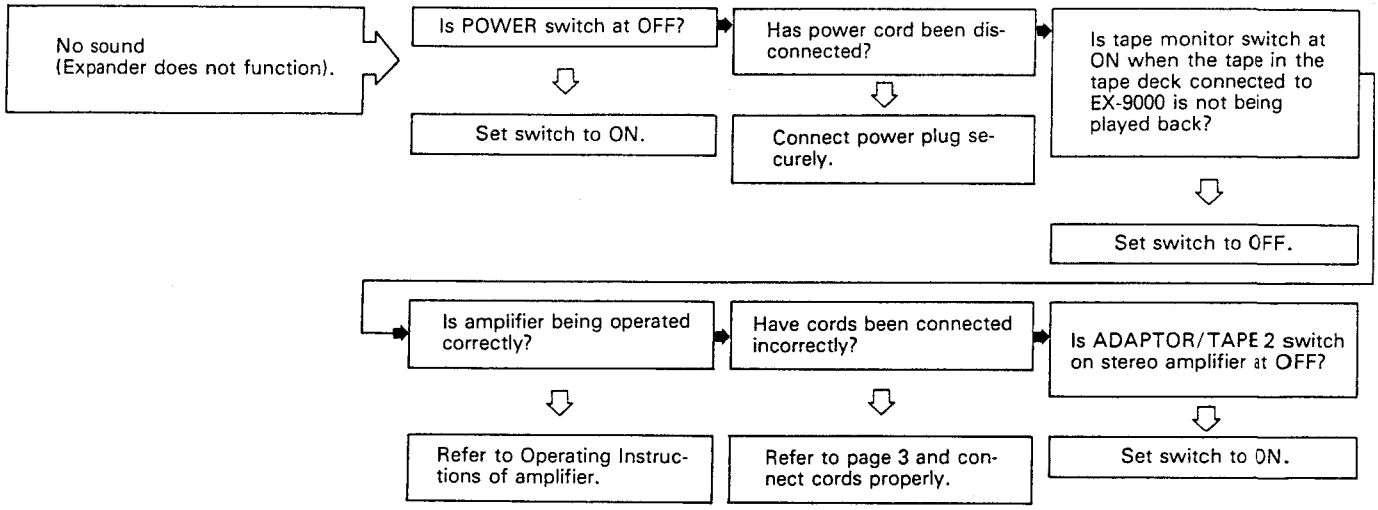
When copying from tape deck 2 to tape deck 1


REC
TAPE 1
Stereo amplifier
INPUT (REC)
LINE
Tape deck 1
Tape terminals (ADAPTOR/TAPE 2)
Speakers
INPUT
IN
EXPANDER
OUT
EX-9000
Dynamic expansion
TAPE
PLAY
LINE-OUTPUT (PLAY)
Tape deck 2
7 When playing back recorded sounds, set the stereo amplifier's FUNCTION switch to TAPE 1.
6 Set to the recording mode.
2 Set the stereo amplifier TAPE MONITOR switch to ON (ADAPTOR/TAPE 2 switch).
NOTE:
Then, turn the stereo amplifier FUNCTION switch to a position other than TAPE 1.
1 Push the TAPE MONITOR switch to the ON position
3 Push the EXPANDER switch to ON position.
5 Adjust the expansion level controls to achieve the desired expansion effect.
4 Play back the tape

ENGLISH

TROUBLESHOOTING

Incorrect operations are often mistaken for trouble and malfunctions. If you think that there is something wrong with this component, check out the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.


No sound
(Expander does not function).
Is POWER switch at OFF?
Set switch to ON.
Has power cord been disconnected?
Connect power plug securely.
Is tape monitor switch at ON when the tape in the tape deck connected to EX-9000 is not being played back?
Set switch to OFF.
Is amplifier being operated correctly?
Refer to Operating Instructions of amplifier.
Have cords been connected incorrectly?
Refer to page 3 and connect cords properly.
Is ADAPTOR/TAPE 2 switch on stereo amplifier at OFF?
Set switch to ON.

SPECIFICATIONS

Processor Section

Dynamic Expansion
HIGH (5 kHz)
MID (500 Hz)
LOW (50 Hz)

Item \ Band	LOW	MID	HIGH
Dynamic Expansion	17 dB	12 dB	17 dB
Upward Expansion	+15 dB	+7 dB	+12 dB
Downward Compression	−2 dB	−5 dB	−5 dB

Impulse Response
Attack Time . . . . . 4.7 m sec.
Release Time . . . . . HARD position; 68 m sec.
SOFT position; 2.7 sec.
Maximum Output Voltage
(Expansion Level VR. ALL MAX)
50 Hz, T.H.D.: 0.8 %, RL: 50 kΩ . . . . . 7.0 V
500 Hz, T.H.D.: 0.8 %, RL: 50 kΩ . . . . . 7.5 V
5 kHz, T.H.D.: 0.8 %, RL: 50 kΩ . . . . . 5.5 V
Input Impedance
EXPANDER INPUT . . . . . 50 kΩ
TAPE PLAY . . . . . 50 kΩ
Output Impedance (1 kHz)
EXPANDER OUTPUT . . . . . 1 kΩ
Signal to Noise Ratio
(IHF A, Short-circuited, 1 kHz,
Expansion Level
VR. ALL MAX) . . . . . 96 dB (at 1 V output)
Gain . . . . . 0 dB

Power Supply Section/Miscellaneous

Power Requirements
KU model . . . . . AC120 V, 60 Hz
S,S/G models . . . . . ~ AC 110 V/120 V/220 V/240 V switchable, 50/60 Hz
HB model . . . . . a.c. 240 volts ~, 50/60 Hz
HEM model . . . . . a.c. 220 volts ~, 50/60 Hz
Power Consumption . . . . . 28 W
AC outlet . . . . . Unswitched 100 W MAX
Dimensions . . . . . 420 (W) x 60 (H) x 212 (D) mm
16-9/16 (W) x 2-3/8 (H) x 8-3/8 (D) in
Weight . . . . . 3.2 kg (7 lb 1 oz)

Furnished Parts

Connection cords with pin plugs 2
Operating Instructions 1

NOTE:
Specifications and design subject to possible modification without notice due to improvements